other of the pipes, the coupler having a diameter different from the diameter of the surface of the first wall of each of the pipes such that the coupler is engage with the first walls of the pipes in an annular interference fit, the coupler being at least partially formed of thermoplastic material and at least one of the axial end portions of the coupler being heat-fused to the end margin of at least one of the pipes.

42 ارمیاناً

4. (Amended) A joint comprising:

a pair of thermoplastic pipes, each of the pipes having an end margin terminating at a pipe end, the end margin of each of the pipes having radially spaced annular first and second walls separated by a void, the first wall of each of the pipes being one of inner and outer walls, the second wall of each of the pipes being the other of the inner and outer walls;

an annular coupler having an annular groove formed therein and axially opposite end portions, one of the axial end portions of the coupler being positioned between the inner and outer walls of one of the pipes and the other of the axial end portions of the coupler being positioned between the inner and outer walls of the other of the pipes, the coupler engaging the first walls of the pipes via an annular interference fit, the coupler being at least partially formed of thermoplastic material and at least one of the axial end portions of the coupler being heat-fused to the end margin of at least one of the pipes; and

an electrical resistance heating element positioned at least partially in the groove of the coupler, at least one of the axial end portions of the coupler being heat-fused to the end margin of at least one of the pipes via the electrical resistance heating element.

10. (Amended) A joint comprising:

a pair of thermoplastic pipes, each of the pipes having an end margin terminating at a pipe end, the end margin of each of the pipes having radially spaced annular first and second

A

2087108 - 3 -

walls separated by a void, the first wall of each of the pipes being one of inner and outer walls, the second wall of each of the pipes being the other of the inner and outer walls, the first wall of each of the pipes having a surface that has a diameter; and

an annular coupler having axially opposite end portions, one of the axial end portions of the coupler being positioned circumjacent the first wall of one of the pipes and the other of the axial end portions of the coupler being positioned circumjacent the first wall of the other of the pipes, the coupler having a diameter different from the diameter of the surface of the first wall of each of the pipes such that the coupler is engaged with the first walls of the pipes in an interference fit in a manner such that the first wall of the end margin of each of the pipes radially deflects toward the second wall of the end margin of the respective pipe, the radial deflection being greatest at the end of the respective pipe and decreasing with distance from the end of the respective pipe, the coupler being at least partially formed of thermoplastic material and at least one of the axial end portions of the coupler being heat-fused to the end margin of at least one of the pipes.

12. (Amended) A method of joining thermoplastic pipes, the method comprising:

providing a pair of thermoplastic pipes, each of the pipes having an end margin terminating at a pipe end, the end margin of each of the pipes having radially spaced annular first and second walls separated by a void, the first wall of each of the pipes being one of inner and outer walls, the second wall of each of the pipes being the other of the inner and outer walls, the first wall of each of the pipes having a surface that has a diameter;

providing an annular coupler having axially opposite end portions, the coupler being dimensioned in a manner such that one of the axial end portions is positionable between the inner and outer walls of one of the pipes and such that the other of the axial end portions is positionable between the inner and outer walls of the other of the pipes, the coupler also being

2087108 - 4 -



dimensioned in a manner such that the coupler has a diameter different from the diameter of the surface of the first wall of each of the pipes such that the coupler is adapted to engage with the first wall of the end margin of each of the pipes in an annular interference fit with the first wall of the end margin of each of the pipes being radially deflected when one of the axial end portions of the coupler is positioned between the inner and outer walls of the respective pipe, the coupler having at least one electrical resistance heating element attached thereto for providing heat to fuse at least one of the axial end portions of the coupler to the end margin of at least one of the pipes when the at least one axial end portion of the coupler is positioned between the inner and outer walls of the respective pipe;

۹۰۶ (سمینا)

AL

inserting one of the axial end portions of the coupler between the inner and outer walls of the end margin of one of the pipes and the other of the axial end portions of the coupler between the inner and outer walls of the end of the other of the pipes, the coupler radially deflecting the first wall of the end margin of each of the pipes; and

passing an electrical current through the at least one electrical resistance heating element to heat-fuse the coupler to the end margin of each of the pipes in a manner such that the coupler operatively permanently connects the pipes together.

- 14. (Amended) The method of claim 13, wherein the step of providing a pair of thermoplastic pipes further comprises providing the pair of thermoplastic pipes in a manner such that the first wall of each of the pipes is the inner wall of the respective pipe and the second wall of each of the pipes is the outer wall of the respective pipe.
- 15. (Amended) The method of claim 14, wherein the step of providing a coupler comprises providing the coupler with an annular groove formed therein, the method further

A

- 5 -

comprising positioning the at least one electrical resistance heating element substantially within the groove of the coupler.

16. (Amended) The method of claim 15, wherein the step of providing an annular coupler comprises providing the annular groove in a manner such that the annular groove of the coupler is arcuate in axial cross-sectional shape and such that the at least one electrical resistance heating element of the coupler is at least one rope-shaped, thermoplastic encased wire that is at least partially positioned within the groove of the coupler.

(ندمنا)

- 17. (Amended) The method of claim 16, wherein the step of providing an annular coupler comprises providing the annular groove in a manner such that the annular groove of the coupler winds annularly into one of the axial end portions of the coupler and overlaps itself in an immediately adjacent manner and such that the groove extends to the other of the axial end portions of the coupler where the groove winds annularly into the other of the axial end portions of the coupler and overlaps itself in an immediately adjacent manner.
- 20. (Amended) The method of claim 12, wherein the step of providing a pair of thermoplastic pipes further comprises providing the pair of thermoplastic pipes in a manner such that the pair of thermoplastic pipes provided are helical-rib profile wall thermoplastic pipes and such that the end margin of each of the pipes has at least a portion of helical rib removed to form the void between the inner and outer walls of the end margin of each of the pipes.
- 21. (Amended) The method of claim 12, wherein the step of providing a pair of thermoplastic pipes further comprises providing the pair of thermoplastic pipes in a manner such that the pair of thermoplastic pipes provided are corrugated profile wall thermoplastic pipes.

A

2087108 - 6 -